

# Notice of Allowability

Application No.

09/680,239

Examiner

Yogesh K. Aggarwal

Applicant(s)

PAIN ET AL.

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/19/2007.
2. ☒ The allowed claim(s) is/are 1-15,18,19 (The claims have been renumbered as 1-17 respectively).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
VIVEK SRIVASTAVA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

*Allowable Subject Matter*

1. Claims 1-15, 18 and 19 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:
3. The prior art of record, neither anticipates nor renders obvious the following limitations as claimed:

[Claim 1]: “A photosensing array of a plurality of sensing pixels arranged in rows and columns, each pixel having a photosensing element to produce charge in response to incident photons from an object and an in-pixel circuit to convert said charge into an electrical pixel signal representing said charge; and

an integrator array of a plurality of integrators arranged in rows and columns respectively equal to said rows and columns of said photosensing array,

wherein integrators of each column are coupled to receive electrical pixel signals from only one designated column of sensing pixels in said photosensing array and are operable to produce time-delayed integration signals representing the object after each sensing pixel is sampled and read out for a number of times equal to a number of said rows in said photosensing array”

[Claims 2-6]: The reasons of allowance for these claims are similar to claim 1.

[Claim 12]: “....The prior art fails to suggest or show fairly an integrator array fabricated on a second area of said substrate adjacent first area, said integrator array having m amplifiers electrically coupled to said m columns active pixel sensors, respectively, wherein each amplifier is coupled n pairs capacitors so that each pair different active pixel sensors in a respective column that are generated at different times produce a summed signal.”.

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[Claim 18]:

Prior art fails to show the prior art fails to suggest or show fairly an operation of one integrator on a signal from one sensing pixel is temporarily overlapped with another operation of an adjacent integrator on another signal from a respective adjacent sensing pixel.

Citation of relevant prior art:

1. Mottin et al. (US Patent # 5,828,408) teaches integrators in each pixel (figure 12a) but TDI effect is generated by memories SCA 1-11 (figure 10).
2. Shapiro et al. (US Patent # 5,619,040) teaches integrators in each pixel (figure 3) but no TDI effect.
3. Audier et al. (US Patent # 5,812,190).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

4. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571)-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YKA  
May 28, 2007



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